

What is Claimed is:

1. A method comprising:

selecting a victim set from a sequentially accessed memory;

selecting a victim way for said selected victim set;

reading a next way pointer from a trace line of a trace currently stored in said selected victim way, if said selected victim way has said next way pointer;

writing a line of said new trace into said selected victim way over said trace line of said currently stored trace; and

forcing a replacement algorithm of a next victim set to select a next victim way for the next victim set using said next way pointer, if said trace line of said currently stored trace is not an active trace tail line.
2. The method of claim 1 wherein selecting said victim set comprises:

selecting said victim set using a next line instruction pointer.
3. The method of claim 1 wherein selecting said victim way for said selected victim set comprises:

selecting said victim way using a predetermined replacement algorithm.
4. The method of claim 3 wherein selecting said victim way using said predetermined replacement algorithm comprises:

selecting said victim way using a least-recently used (LRU) replacement algorithm.

5. The method of claim 1 further comprising:
incrementing to a next selected victim set, unless said line is a last line in said new trace.
6. The method of claim 1 wherein selecting said victim set from said sequentially accessed memory comprises:
selecting said victim set from a sequentially accessed trace cache.
7. The method of claim 6 wherein selecting said victim set from said sequentially accessed trace cache comprises:
selecting said victim set from a plurality of victim sets in said sequentially accessed trace cache using a next line instruction pointer.
8. A machine-readable medium having stored thereon a plurality of executable instructions to perform a method comprising:
selecting a victim set from a sequentially accessed memory;
selecting a victim way for said selected victim set;
reading a next way pointer from a trace line of a trace currently stored in said selected victim way, if said selected victim way has said next way pointer;
writing a next line of said new trace into said selected victim way over said trace line of said currently stored trace; and

forcing a replacement algorithm of a next victim set to select a next victim way for the next victim set using said next way pointer, if said trace line of said currently stored trace is not an active trace tail line.

9. The machine-readable medium of claim 8 wherein selecting said victim set comprises:

selecting said victim set using a next line instruction pointer.

10. The machine-readable medium of claim 8 wherein selecting said victim way for said selected victim set comprises:

selecting said victim way using a predetermined replacement algorithm.

11. The machine-readable medium of claim 10 wherein selecting said victim way using said predetermined replacement algorithm comprises:

selecting said victim way using a least-recently used (LRU) replacement algorithm.

12. The machine-readable medium of claim 8 further comprising:

incrementing to a next selected victim set, unless said line is a last line in said new trace.

13. The machine-readable medium of claim 8 wherein selecting said victim set from said sequentially accessed memory comprises:

selecting said victim set from a sequentially accessed trace cache.

14. The machine-readable medium of claim 13 wherein selecting said victim set from said sequentially accessed trace cache comprises:

selecting said victim set from a plurality of victim sets in said sequentially accessed trace cache using a next line instruction pointer.

15. A method comprising:

selecting a victim set from a sequentially accessed memory;

selecting a victim way for said selected victim set;

reading a next way pointer from a trace line of a trace currently stored in said selected victim way, if said selected victim way has said next way pointer;

writing a next line of said new trace into said selected victim way over said trace line of said currently stored trace; and

storing said next way pointer, if said next line of said new trace is not a last line of said new trace.

16. The method of claim 15 wherein selecting said victim set comprises:

selecting said victim set using a next line instruction pointer.

17. The method of claim 15 wherein selecting said victim way for said selected victim set comprises:

selecting said victim way using a predetermined replacement algorithm.

18. The method of claim 15 wherein selecting said victim way for said victim set comprises:

selecting said victim way using said stored next way pointer.

19. The method of claim 15 further comprising:

incrementing to a next selected victim set, unless said line is a last line in said new trace.

20. The method of claim 15 wherein selecting said victim set from said sequentially accessed memory comprises:

selecting said victim set from a sequentially accessed trace cache.

21. The method of claim 20 wherein selecting said victim set from said sequentially accessed trace cache comprises:

selecting said victim set from a plurality of victim sets in said sequentially accessed trace cache using a next line instruction pointer.

22. A machine-readable medium having stored thereon a plurality of executable instructions to perform a method comprising:

- selecting a victim set from a sequentially accessed memory;
- selecting a victim way for said selected victim set;
- reading a next way pointer from a trace line of a trace currently stored in said selected victim way, if said selected victim way has said next way pointer;
- writing a next line of said new trace into said selected victim way over said trace line of said currently stored trace; and
- storing said next way pointer, if said next line of said new trace is not a last line of said new trace.

23. The machine-readable medium of claim 22 wherein selecting said victim set comprises:

- selecting said victim set using a next line instruction pointer.

24. The machine-readable medium of claim 22 wherein selecting said victim way for said selected victim set comprises:

- selecting said victim way using a predetermined replacement algorithm.

25. The machine-readable medium of claim 22 wherein selecting said victim way for said selected victim set comprises:

- selecting said victim way using said stored next way pointer.

26. The machine-readable medium of claim 22 further comprising:
incrementing to a next selected victim set, unless said line is a last line in said new trace.

27. The machine-readable medium of claim 22 wherein selecting said victim set from said sequentially accessed memory comprises:
selecting said victim set from a sequentially accessed trace cache.

28. The machine-readable medium of claim 27 wherein selecting said victim set from said sequentially accessed trace cache comprises:
selecting said victim set from a plurality of victim sets in said sequentially accessed trace cache using a next line instruction pointer.

29. A processor comprising:
an execution component;
a front end component coupled to said execution component, said front end component to provide instructions to said execution component; and
a retirement component coupled to said execution component to receive results from the execution of said provided instructions, said front end component including a machine-readable medium having stored thereon a plurality of executable instructions to perform a method comprising:
selecting a victim set from a sequentially accessed memory;
selecting a victim way for said selected victim set;

reading a next way pointer from a trace line of a trace currently stored in said selected victim way, if said selected victim way has said next way pointer;

writing a next line of said new trace into said selected victim way over said trace line of said currently stored trace; and

forcing a replacement algorithm of a next victim set to select a next victim way for the next victim set using said next way pointer, if said trace line of said currently stored trace is not an active trace tail line.

30. The processor of claim 29 further comprising:

a cache memory coupled to said execution component.

31. The processor of claim 29 wherein said execution component is to execute said provided instructions out-of-order of an original program order.

32. The processor of claim 29 wherein said machine-readable medium comprises a sequentially accessed memory.

33. The processor of claim 29 wherein selecting said victim set comprises: selecting said victim set using a next line instruction pointer.

34. The processor of claim 29 wherein selecting said victim way for said selected victim set comprises:

selecting said victim way using a predetermined replacement algorithm.

35. A computer system comprising:

- a memory to provide program instructions; and
- a processor coupled to said memory to receive and execute said program instructions, said processor including:
 - an execution component;
 - a front end component coupled to said execution component, said front end component to provide instructions to said execution component; and
 - a retirement component coupled to said execution component to receive results from the executing of said provided instructions, said front end component including a machine-readable medium having stored thereon a plurality of executable instructions to perform a method including:
 - selecting a victim set from a sequentially accessed memory;
 - selecting a victim way for said selected victim set;
 - reading a next way pointer from a trace line of a trace currently stored in said selected victim way, if said selected victim way has said next way pointer;
 - writing a next line of said new trace into said selected victim way over said trace line of said currently stored trace; and
 - forcing a replacement algorithm of a next victim set to select a next victim way for the next victim set using said next way pointer, if said trace line of said currently stored trace is not an active trace tail line.

36. The computer system of claim 35 further comprising:
a cache memory coupled to said execution component.

37. The computer system of claim 35 wherein said execution component is to execute said instructions out-of-order of an original program order.

38. The computer system of claim 35 wherein said machine-readable medium comprises a sequentially accessed memory.

39. The computer system of claim 35 wherein selecting said victim set comprises:
selecting said victim set using a next line instruction pointer.

40. The computer system of claim 35 wherein selecting said victim way for said selected victim set comprises:
selecting said victim way using a predetermined replacement algorithm.